

a plurality of Hall effect devices inserted at least partially within said slit, said conductor is configured to generate a magnetic field having a pre-determined shape, each said Hall effect device configured to detect said pre-determined shape and generate an output.

20. (once amended) A residential electricity meter comprising a voltage sensor and a current sensor, said current sensor comprising a conductor comprising a slit and a plurality of Hall effect devices inserted at least partially within said slit, said conductor is configured to generate a magnetic field comprising at least a first magnetic field component having a first direction and a second magnetic field component having a second direction different from said first direction, and a pre-determined shape, each said Hall effect device configured to detect said pre-determined shape and generate an output.

21. (once amended) A method for sensing voltage and current in a residence, said method comprising:

providing an electricity meter comprising:

a voltage sensor; and

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a current sensor, wherein the current sensor comprises a conductor comprising a slit and a plurality of Hall effect devices inserted at least partially within the slit, wherein the conductor is configured to generate a magnetic field having a pre-determined shape, and each Hall effect device is configured to detect the pre-determined shape and generate an output.

29. (once amended) A method for sensing voltage and current in a residence, said method comprising:

providing a residential electricity meter comprising:

a voltage sensor; and

a current sensor, said current sensor comprising a conductor comprising a slit and a plurality of Hall effect devices inserted at least partially within said slit, said conductor is configured to generate a magnetic field comprising at least a first magnetic field component having a first direction and a second magnetic field component having a second direction